### VM0404

# 4x4 Video Matrix Switch with Audio RS-232 Control Tool

## **User Manual**

ATEN RS-232 Control	Tool	
Simply Better Connections		VM0404
Switch Port	Output Port 1(")	
EDID Mode	Input Video/Audio	Display
Mute     Profile     Read Info	• Port1 •         • Video •           • Port2 •         • Audio •           • Port3 •         • V+A(*) •           • Port4 •         • • • • • • • • • • • • • • • • • • •	• OFF •
Button Control     RS232 Baud     Rate Setting     RS-232 Setting	sw o01 i01 ACK: Connect to 'COM1' Port.	SEND
County	* : default	

# **FCC Information**

**Warning:** This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

# RoHS

This product is RoHS compliant.

# SJ/T 11364-2006

The following contains information that relates to China.

动体力的	有毒有害物质或元素						
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚	
电器部件		0	0	0	0	0	
机构部件	0	0	0	0	0	0	

- 〇: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006规定的限量要求之下。
- ●: 表示符合欧盟的豁免条款,但该有毒有害物质至少在该部件的 某一均质材料中的含量超出SJ/T 11363-2006的限量要求。
- X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超 出SJ/T 11363-2006的限量要求。



# **RS-232 Control Tool Operation**

# Overview

The VM0404 4x4 Video Matrix Switch with Audio has a built-in bi-directional RS-232 serial interface that allows system control through a high-end controller, PC, and/or home automation / home theater software package. The RS-232 Control Tool is an application used to send operational commands from your PC – to the VM0404 through a serial (RS-232) interface connection. RS-232 serial operations to and from the VM0404 installation can be managed via a Graphical User Interface (GUI) on systems that are running Windows. In order to use this Control Tool, two separate items of software must be installed on all of the PCs in your installation – .NET Framework 2.0 and the Control Tool AP. The procedure for installing and operating the RS-232 Control Tool is detailed in the following sections.

# **Before You Begin**

### .NET Framework 2.0

To install .NET Framework on your PC, do the following:

- 1. Download the executable file from the Microsoft Download Center online, and run it.
- 2. Follow the instructions on the screen. The installation applet will automatically detect the operating system and install the correct drivers

## RS-232 Control Tool AP

To download the RS-232 Control AP in order to use the Browser GUI to manage the serial commands in your VM0404 installation, do the following:

- 1. Download the RS-232 Control Tool AP from the ATEN website (www.aten.com).
- 2. Save the file to a convenient location.

3. Double click the file to run setup. The Welcome screen appears:



#### Click Next.

4. The License Agreement appears:

5 VM0404_RS-232ControlTool Setup	×
License Agreement Please read the following license agreement carefully.	
Software End User License Agreement You may use our software and services only on the condition that you agree to abide by the following terms. We sincerely recommend that you shall read this Agreement very carefully. BY DOWNLOADING, INSTALLING OR USING OUR SOFTWARE, YOU ARE AGREEING ELECTRONICALLY TO THE TERMS OF THIS SOFTWARE END USER LICENSE AGREEMENT (THE "AGREEMENT" or "LICENSE"), IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, PLEASE DO NOT INSTALL, COPY, OR USE THE SOFTWARE. 1. DEFINITIONS:	
C I agree to the terms of this license agreement C I do not agree to the terms of this license agreement	
< <u>B</u> ack <u>N</u> ext > <u>Cancel</u>	

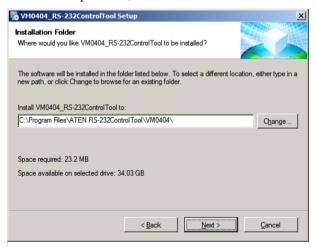
If you agree with the License Agreement, select *I agree with the terms of this license agreement*, and click **Next**.

5. The User Information screen appears:

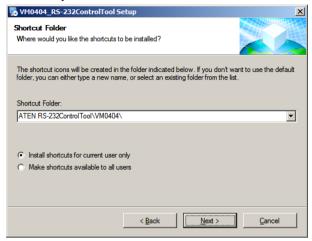
SVM0404_RS-232ControlTool Setup	×
User Information Enter your user information and click Next to continue.	
Name:	
Company:	
< <u>B</u> ack	Cancel

Fill in your Name and Company, then click Next.

6. When the Installation Folder screen appears, you can select where you want to install the program by clicking **Change**, or use the default installation location provided, then click **Next**.



7. On the Shortcut Folder screen, type in or use the drop-down menu to enter the folder where you want to install the shortcuts.

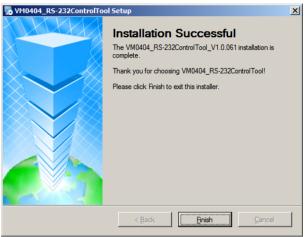


Then select *Install shortcuts for current user only*, or *Make shortcuts available to all users*, and click **Next**.

8. At the Ready to Install screen, confirm your settings. Click **Back** if you need to make changes, or click **Next** to begin the installation.

by VM0404_RS-232ControlTool Setup	×
Ready to Install You are now ready to install VM0404_RS-232ControlTool_V1.0.061	
The installer now has enough information to install VM0404_RS-232ControlT	Fool on your computer.
The following settings will be used:	
Install folder: C:\Program Files\ATEN RS-232ControlTool\VM0404\	
Shortcut folder: ATEN RS-232ControlTool\VM0404\	
Please click Next to proceed with the installation.	
< Back	Cancel

9. When the installation has completed successfully, the following screen appears:



Click Finish. You are now ready to use the RS-232 Control Tool.

# **GUI Main Page**

The RS-232 Control Tool is a convenient and intuitive application to send RS-232 commands to your VM0404. For detailed information about the function of each RS-232 command, see the VM0404's user manual. To invoke the GUI, simply click the RS-232 Control Tool shortcut. The interface opens on the *Switch Port* page by default, as shown below:

ATEN RS-232 Contro	l Tool	X
Simply Better Connections		VM0404
Switch Port	Output Port 1(*)	
EDID Mode	Input Video/Audio	Display
Mute     Profile     Read Info		OFF
Button Control     RS232 Baud     Rate Setting     RS-232 Setting	sw o01 i01 ACK: Connect to 'COM1' Port.	SEND
- no 202 Octaing	* : default	

The various elements of the GUI are described in the proceeding sections.

## Switch Port

ATEN RS-232 Control	Tool			
Simply Botter Connections			VME	404
Switch Port	Output P	ort 1(")		
EDID Mode	Input	Video/Audio	Display	
• Mute	• Port1 •	· Video ·	• ON •	
Profile	Port2	• Audio •	• OFF •	
• Profile	• Port3 •	• V+A(*) •		
Read Info	• Port4 •			
Button Control				
RS232 Baud Rate Setting	sw o01 i01		s	END
RS-232 Setting	ACK: Connect t	o 'COM1' Port.		
	* : default			VanCryst"

On the Switch Port page, the following actions are possible:

- Select the **Output** port from the drop-down menu (options are Ports 1–4 and default \*).
- Select the **Input** port (options are Port1–Port4).
- Under Video/Audio:
  - Select **Video** to switch the video source for the selected *Output* port to the selected *Input* port.
  - Select **Audio** to switch the audio source for the selected *Output* port to the selected *Input* port.
  - Select V+A(\*) to switch the video and audio source for the selected *Output* port to the selected *Input* port.
- Turn the **Display** On or Off.
- Select your commands or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Switch Port Commands**

These actions can also be performed by keying the command into the text box, and clicking **Send**. The formula for Switch Port commands is as follows:

#### Switch Command + Output Command + Port number + Input Command + Port Number + Control + [Enter]

1. For example, to switch output port 02 (audio and video) to input port 04, type the following:

#### sw o02 i04 [Enter]

- To turn off video output on port 03, type the following: sw o03 off [Enter]
- To switch output port 02 (video only) to input port 03, type the following: sw o02 i03 video [Enter]

Command	Description			
SW	Switch command			
Output Command	Description			
0	Output command			
Output Port Number	Descr	iption		
уу	01-04 port (default is 01)			
1	Local output port			
*	All output ports			
Input Command	Descr	iption		
i	Input command			
Input Port Number	Descr	iption		
XX	01-04 port (default is 01)			
11	Local input port			
Control	Descr	iption		
on	Turn on			
off	Turn off			
+	Next port			
-	Previous port			
video	Switch video only	blank = video+audio		
audio	Switch audio only			
Enter	Descr	iption		
[Enter]	Enter and send out the command			

The following table shows the possible values for switch commands:

Cmd	Out	N2	In	N1	C1	C2	Description
SW	0	уу *	i	xx	video audio		Switch Output Port xx to Input Port yy (xx:01~04, yy:01~04, *)
SW	0	уу *			video audio	on off	Turn on Output Port yy Turn off Output Port yy (yy:01~04, *)
SW	0	уу *			video audio	+ -	Switch Next Input to Output Port yy Switch Previous Input to Output Port yy (yy:01~04, *)

#### Switch Port Command Table:

After commands are sent, acknowledge messages are returned as follows:

Ack	Description
Command OK	Command is correct and function executed
Command Incorrect	Unavailable command or parameters

Note: 1. Each command string can be separated with a space.

- 2. The **Port Number** command string can be skipped, and the default value will be used.
- 3. The **Audio** or **Video** command string can be skipped, and both values will be used.

ATEN RS-232 Control	Tool			
Simply Better Connections		VM0404		
Switch Port	Function			
EDID Mode	• Port1 •			
Mute     Profile	Remix     Auto     Default(*)			
<ul> <li>Read Info</li> </ul>				
Button Control				
RS232 Baud Rate Setting	edid default	SEND		
<ul> <li>RS-232 Setting</li> </ul>	ACK: Connect to 'COM1' Port.			
	· · · · · · · · · · · · · · · · · · ·			

On the EDID Mode page, the following actions are possible:

- Click **Port 1** to implement the EDID of the connected display to Port 1 to all video sources.
- Click Remix to implement remix mode this applies a mix of EDIDs from connected displays according to each connection when the VM0404 is powered on or immediately after pressing Enter to select the Remix option.
- Click **Auto** to have the VM0404 apply an automatically selected EDID to each video source.
- Click **Default**(\*) to implement ATEN's default EDID.
- Select the command or use the text box to manually enter the command.
- Click **Send** to send the command.

#### EDID Command

Extended Display Identification Data (EDID) is a data format that contains a display's basic information and is used to communicate with the video source/ system. You can set up which EDID mode the VM0404 uses with the following command:

#### EDID Command + Control (port1 / remix / auto / default) + [Enter]

For example, to use the Port1 EDID setting, type the following:

#### edid port1 [enter]

#### Mute

		VM0404
Switch Port     EDID Mode     Mute     Profile     Read Info     Button Control	Output Port  Function ON OFF	
RS232 Baud Rate Setting	mute o01 on ACK: Connect to 'COM1' Port.	SEND
RS-232 Setting	* : default	VanCryst Presized AV Stature by AEP

On the *Mute* page, the following actions are possible:

- Select an **Output** port from the drop-down menu.
- Click **ON** to mute the selected port.
- Click **OFF** to enable the audio of the selected port.
- Select the command or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Mute Command**

Enable or disable audio coming from the output port(s) using the following command:

#### Mute Command + Output + Port + Control (On / Off) [Enter]

For example, to mute the audio for output port 04, type the following:

#### mute o04 on [enter]

Simply Batter Connections		VM0404
Switch Port	Profile Function	
EDID Mode	00(") • Save •	
• Mute	· Load ·	
Profile		
<ul> <li>Read Info</li> </ul>		
Button Control		
<ul> <li>RS232 Baud Rate Setting</li> </ul>	profile f00 save	SEND
<ul> <li>RS-232 Setting</li> </ul>	ACK: Connect to 'COM1' Port.	

On the *Profile* page, the following actions are possible:

- Select a **Profile** from the drop-down menu.
- Click **Save** to store the current connection configuration to the active profile.
- Select Load to have the VM0404 use a saved profile.
- Select the command or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Profile Command**

The formula for the Save/Load Profile command is as follows:

#### Command + Profile + Control (Save / Load) + [Enter]

For example, to save the current configuration to profile 7, type the following:

#### profile f07 save [enter]

### Read Info

ATEN RS-232 Control	Tool	
Simply Better Connections		VM0404
Switch Port	Function	
EDID Mode	• Version •	
• Mute		
Profile		
Read Info		
Button Control		
RS232 Baud Rate Setting	read version	SEND
RS-232 Setting	ACK: All COM Port has been used	
	* : default	

On the Read Info page, the following actions are possible:

- Click **Version** to view the current firmware version.
- Select your commands or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Read Info Command**

View information from the device using the following command:

#### Read Command + Control (version) [Enter]

For example, to read the firmware version of the VM0404, type the following: **read version [enter]** 

### **Button Control**

ATEN RS-232 Control	Tool	×
Simply Better Connections		VM0404
Switch Port     EDID Mode     Mute     Profile     Read Info     Button Control	Function • ON • • OFF •	
<ul> <li>RS232 Baud Rate Setting</li> <li>RS-232 Setting</li> </ul>	button on ACK: Connect to 'COM1' Port.	SEND
• NO-252 Setting	* : default	VanCryst Profession AV Calarse by ADM

On the Button Control page, the following actions are possible:

- Click **ON** to enable the panel button function.
- Click **OFF** to disable the panel button function.
- Select your commands or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Button Control Command**

The formula for the Button Control command is as follows:

```
Command + Control + [Enter]
```

For example, to enable the panel button function, type the following:

```
button on [enter]
```

### RS-232 Baud Rate Setting

ATEN RS-232 Contro	l Tool	
Simply Better Connections		VM0404
Switch Port     EDID Mode     Mute     Profile     Read Info     Button Control	Function	
RS232 Baud Rate Setting	baud 19200	SEND
RS-232 Setting	ACK: Connect to 'COM1' Port. * : default	

On the Baud Rate Setting page, the following actions are possible:

- Select the RS-232 Baud Rate you want the VM0404 to use. Options are 9600, 19200 (default), 38400 and 115200.
- Select your commands or use the text box to manually enter the command.
- Click **Send** to send the command.

#### **Baud Rate Setting Command**

The formula for Baud Rate setting command is as follows:

#### Baud Command + Control [Enter]

For example, to select 38400 as your baud rate, type the following:

baud 38400 [enter]

### **RS-232 Setting**

ATEN RS-232 Contro	l Tool		
Simply Better Connections			VM0404
Switch Port     EDID Mode	COM Setting	COM1 -	
• Mute	Baud Rate Data Bit Parity	19200(*) 💌 8 bit None	
Profile     Read Info	Stop Bit Flow Control	1 bit None	
Button Control     RS232 Baud     Rate Setting	ACK: Connect to	'COM1' Port	CONNECT
RS-232 Setting	* : default		

The controller's serial port should be configured as follows:

Baud Rate	19200
Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None

To select the serial port, do the following:

• Select the port and baud rate from the drop-down menus and click **CONNECT**.

If the port connection exists, the Acknowledgment message reads as follows:

**Open port 'COM1' successfully.** 

#### Verification

After entering a command, a verification message appears at the end of the command line as follows:

- **command OK** indicates that the command is correct and successfully performed by the switch.
- **command incorrect** indicates that the command has the wrong format and/or values.